

WHAT IS CLAIMED IS:

1. An electronic-component conveying device comprising:  
a conveying plate which moves in one conveying direction and includes a plurality of component-holders arranged at a predetermined pitch along the conveying direction;  
component-containers each containing a plurality of electronic components for supplying the components to the plurality of component-holders, the electronic components being held by the plurality of component-holders while being conveyed by the conveying plate;  
a component-detecting unit for detecting the presence of the electronic components in the plurality of component-holders; and  
a component-feeding unit for feeding additional electronic components to each of the component-containers based on the detection of the presence of the electronic components.
2. The electronic-component conveying device according to Claim 1, wherein the component-feeding unit feeds a predetermined number of the additional electronic components when the supplied rate of the electronic components in the plurality of component-holders falls below a certain rate, or when the number of component-holders that are empty exceeds a certain value.
3. The electronic-component conveying device according to Claim 1, wherein the component-holders are arranged in multiple lines along the conveying direction and in multiple rows that are substantially perpendicular to the conveying direction, each of the multiple lines being provided with one of the component-containers, the component-detecting unit detects the presence of the electronic components for each of the multiple lines, and the component-feeding unit feeds the additional electronic components to a corresponding one of the containers based on the detection of the presence of the electronic components for each of the multiple lines.
4. The electronic-component conveying device according to Claim 1, wherein the component-detecting unit detects the presence of the electronic components in the plurality of component-holders in a non-contact manner.

5. The electronic-component conveying device according to Claim 1, wherein the component-detecting unit detects the presence of the electronic components in the plurality of component-holders in a contact manner.

6. The electronic-component conveying device according to Claim 1, further comprising:

a component-inspection unit for measuring electrical properties of the electronic components and for inspecting the appearance of the components to determine whether each component is defective or non-defective, the components being conveyed to the inspection unit by the conveying plate;

a discharger for discharging the defective electronic components conveyed by the conveying plate; and

a collector for collecting the non-defective electronic components conveyed by the conveying plate.

7. The electronic-component conveying device according to Claim 1, wherein the conveying plate rotates in a clockwise direction.

8. The electronic-component conveying device according to Claim 1, wherein the electronic components are substantially rectangular chip components.

9. The electronic-component conveying device according to Claim 1, wherein the component-holders have a vacuum suction unit for applying a vacuum to hold the components in the component-holders.

10. The electronic-component conveying device according to Claim 1, wherein the component-detecting unit includes a plurality of cameras for detecting the components.

11. The electronic-component conveying device according to Claim 10, further comprising a controller calculating a supplied rate of the electronic components based on images obtained from the plurality of cameras.

12. The electronic-component conveying device according to Claim 11, wherein if the supplied rate is below a certain rate, the controller feeds additional electronic components to at least one of the component-containers.

13. The electronic-component conveying device according to Claim 1, wherein the component-detecting unit includes at least one of a plurality of cameras, a plurality of fiber-optic sensors, a plurality of photoelectric sensors, a plurality of proximity sensors, a plurality of laser sensors, and a plurality of displacement sensors, for detecting the components.

14. The electronic-component conveying device according to Claim 13, further comprising a controller calculating a supplied rate of the electronic components based on signals from the at least one of the plurality of cameras, the plurality of fiber-optic sensors, the plurality of photoelectric sensors, the plurality of proximity sensors, the plurality of laser sensors, and the plurality of displacement sensors.

15. The electronic-component conveying device according to Claim 14, wherein if the supplied rate is below a certain rate, the controller feeds additional electronic components to at least one of the component-containers.